Transportation Appendices

Table of Contents

Transportation Appendix A

Inventory of Existing Facilities and Services

Limited Access Facilities, Arterials and Streets

There are approximately 54,000 acres of land in the city, nearly 14,000 of which (about 26 percent) are used for street rights-of-way. Seattle's street network in 2000 consists of 475 miles of arterials, including some that are designated state routes, and 1223 miles of non-arterials (see Transportation Figure A-1). In the arterial system there are 162 miles of principal arterials, 176 miles of minor arterials, and 137 miles of collector arterials. There are 979 signalized intersections, 4,596 non-signalized arterial intersections and 7,029 non-arterial intersections. Transportation Figure A-2a-c show the locations of traffic and pedestrian crossing signals in Seattle. The "state signals" are managed by the Washington State Department of Transportation and are located mostly at freeway on- and off-ramps Transportation Figure A-3 shows the distribution of the more than 77,000 street lights along rights-of-way in, and along the borders of, Seattle. The numbers in the Figure indicate the number of city-operated street lights in each one-quarter-square-mile area.

The Seattle Comprehensive Transportation Program (SCTP) identifies street classifications for the city's arterial and street system for six different transportation uses: Traffic, Transit, Truck, Bicycle, Pedestrian and Boulevard. The traffic classifications follow the Washington State street classification system (principal arterials, minor arterials, collector arterials). High-occupancy vehicle (HOV) lanes exists on some arterials and limited access facilities as shown in Transportation Figure A-4.

Traffic Volumes

Transportation Figure A-5 shows the 1999 average weekday traffic volumes on Seattle's arterials and freeways. To analyze trends, traffic counts are taken annually on arterials and freeways along screenlines at or near the city limits, and are added together to estimate the traffic volume entering and exiting the city daily. Transportation Figure A-6 shows the trend in average weekday traffic at the city limit screenlines; the volume has increased from 758,000 in 1980 to 1,137,000 in 1998 -- a 50 percent increase over 18 years. During the same period, Seattle's population increased by 9.3 percent. However, between 1995 and 1998 approximately 50,000 new jobs were added within the city, a 12% increase.

Transportation Figure A-7 similarly shows the trend in average weekday traffic crossing an imaginary cordon around downtown Seattle, bounded by Lenora Street, I-5, Royal Brougham Way, and Alaskan Way. The volumes include traffic getting on and off the ferries. From 1980 to 1998, downtown cordon traffic grew 24 percent, from 371,000 to 462,000.

In addition, the number of registered vehicles in Seattle has increased from 474,535 in 1980 to 536,335 in 1990, representing a 13 percent increase. Vehicle ownership has increased from 0.7 per resident in 1968, to 0.96 per resident in 1980, and to 1.04 per resident in 1990, representing an eight percent increase from 1980 to 1990.

Transit

Public transit in Seattle is provided by three agencies. Metro provides bus, trolley and streetcar services that cover most of King County. Community Transit and Sound Transit operate express bus services to Seattle from King, Snohomish and Pierce Counties. As of 2000, Metro serves a population of nearly 2 million over a 2,128-square-mile service area. It operates approximately 1300 vehicles on about 188 routes representing 7,050 route miles with annual ridership of over 75 million. Transportation Figure A-8 shows Metro's 1998 transit routes in Seattle.

In September 1990, Metro began bus operations in a 1.3-mile-long tunnel under Third Avenue and Pine Street from the International District to 9th Avenue and Pine Street. The tunnel has five stations, and connects to Interstate 90 at the south end and to the Interstate 5 express lanes at the north end. Dual-powered buses operate through the tunnel; diesel power is used on streets and highways, while electric power is used in the tunnel. Use of dual-powered buses in the tunnel will eventually cease and be replaced by Sound Transit's Link light rail system, scheduled for completion by 2007.

Metro has about 56 miles of two-way overhead electric trolley wire in Seattle used by approximately 100 trolley buses. Trolleys produce no tailpipe emissions and are considerably quieter than diesel buses.

All buses operating in downtown Seattle are free to riders from 6:00 a.m. to 7:00 p.m. The ride-free zone boundaries are Battery Street, Sixth Avenue, I-5, Jackson Street, and the waterfront. The ride-free zone significantly reduces the need to use cars for short trips around downtown.

The Waterfront Streetcar system includes three streetcars, nine stations, and more than two miles of rail. The tracks and overhead wire run along Alaskan Way and South Main Street from Myrtle Edwards Park to the International District.

Sound Transit is the regional transit authority for the Puget Sound area (which includes portions of King, Snohomish and Pierce Counties.) Sound Transit was created in 1996 by voters within its boundary, and is planning and implementing the first phase of its "Sound Move" regional transit plan. The Sound Move plan includes: operation of a 24-mile light rail system (called "Link") between SeaTac and the University District (via downtown Seattle and the Rainier Valley), with possible extension to Northgate; peak period commuter rail services (called "Sounder") along existing rail lines between downtown Seattle, Tacoma and Everett; and regional bus services connecting major centers throughout Sound Transit's service area.

As of 2000, Sound Transit provides regional express bus services between suburban areas within its three-county service area, downtown Seattle, West Seattle, and the University District. Sounder commuter rail between Tacoma and Seattle will begin in 2000, with the Everett-Seattle service planned to start in 2001. Besides the King Street Station, where the Tacoma and Everett services will serve downtown Seattle, there are two provisional Sounder stations identified in Seattle in the Georgetown and Ballard communities.

By 2007 there will be at least 13 Link light rail stations in Seattle: in the Rainier Valley at Henderson Street (Rainier Beach area), Othello Street (Holly Park area), Edmunds Street (Columbia City area), and McClellen Street (Mount Baker area); through downtown using

the existing downtown tunnel stations (except for the Convention Center station which will be redeveloped); at Madison Street in the First Hill area; on Broadway in the Capitol Hill area; and at Pacific and NE 45th Streets in the University District. Stations planned but deferred for future operation include Graham Street, Beacon Hill, and Royal Brougham. Extension of Link north (during the first phase) to serve the Roosevelt and Northgate communities is dependent upon funding. When the first phase of Link is in full operation it is expected that Metro bus services will be reallocated and redesigned to integrate with the light rail service.

Metro and WSDOT operate 14 park-and-ride lots in Seattle with approximately 2,500 parking spaces, as shown in Transportation Figures A-9 and A-10. There is also a Metro transit center just south of the Northgate Mall. The park-and-ride lots may be used by commuters, free of charge, to meet a carpool, vanpool or bus.

The City of Seattle operates a monorail on a mile of elevated guideway between Westlake Mall in downtown Seattle and the Seattle Center. The monorail carried about 2.5 million riders in 1999.

Metro provides wheelchair-accessible buses and other special transportation services for persons unable to use regular bus service. For example, low-income King County residents 65 years or older and people with disabilities are eligible for reduced-cost taxi trips. Other Metro programs and services include custom buses, special event service, the U-Pass program with the University of Washington, bikes on buses, vanpools, and a ridematch service.

Bicycles and Pedestrians

Bicycles are classified as "vehicles" in the Seattle Traffic Code and have the right to use all streets in the city except where explicitly prohibited. Transportation Figure A-11 shows the three categories of bike facilities, and the miles of each. Bicycle racks are provided in neighborhood commercial areas and downtown, and some work places provide secure, weather-protected bike parking, showers, and lockers. As of 2000, the City has installed over 1900 bike racks across the city. Seattle's Land Use Code requires that many new developments include bike parking where parking is built for cars.

Metro first installed bike racks on buses in 1979 to carry bicyclists across the SR-520 bridge Metro has since installed bike racks on their entire fleet of buses. Metro also has bike racks and lockers at some of its Seattle park-and-ride lots and at the Northgate Transit Center. The Washington State Ferry Colman Dock in downtown Seattle has bicycle racks for 10 to 15 bikes, while the Fauntleroy dock has none. All ferries provide simple tie-downs for bicycle transport, although the passenger-only ferries can carry only five bikes.

Of the City's 479 miles of arterials (in 1995), about 306 miles had sidewalks or asphalt walkways on both sides of the street, and 140 miles had a sidewalk or walkway on one side of the street; about 33 miles of arterials do not have sidewalks or asphalt walkways on either side of the street. "School walk boundaries" define areas where school bus service is not provided and students generally walk to school. In 1995, there were 20 miles of arterials in elementary school walk boundaries without sidewalks on either side of the street; and there were 362 miles of Seattle residential streets (non-arterials) lacking sidewalks within the school walk boundaries.

Parking

On-street parking occurs in the public right-of-way, and is therefore regulated by the City through the creation of no-parking and special-use parking zones, time-of-day restrictions, parking duration limits, meter rates, and Residential Parking Zones. Parking meter rates in 2000 are $1.00 per hour in downtown Seattle, First Hill, Broadway, and the University District, and $.60 per hour elsewhere. Residential Parking Zones (RPZs) are designed to protect Seattle's residential neighborhoods from parking impacts and congestion from major employment and/or retail centers. In an RPZ, on-street parking is generally restricted to two or three hours, except for residents and guests who display special RPZ decals.

Existing RPZs are around Husky Stadium and Providence Hospital, and in the following communities: Montlake, Fauntleroy, Capitol Hill (Group Health), Wallingford, University District area, First Hill, Eastlake, Magnolia, N Queen Anne, North Capitol Hill, Lower Queen Anne, South Seattle (Franklin HS), Belmont/Harvard, Mount Baker, North Beacon Hill, Licton Springs, and Roosevelt/Cowen Park.

Off-street parking facilities are usually privately-owned and operated. The City regulates the location and size of garages and lots through the Land Use Code. Transportation Figure A-12 shows inventory data for off-street parking in three Seattle areas: the Central Business District, lower Queen Anne, and First Hill.

Carpools receive preferential parking treatment through City programs, allocation of on-street parking spaces, and Land Use Code requirements for carpool parking in new developments.

Rail

Passenger Rail: Amtrak operates trains over 900 miles of Burlington Northern tracks in the state and provides service to 16 cities. The Empire Builder provides daily service from Seattle to Spokane and on to Chicago; the Cascades operates twice a day to/from Portland, and daily to/from Vancouver, B.C. The Coast Starlight runs daily connecting Seattle to Portland, Oakland and on to Los Angeles

Freight: Burlington Northern Santa Fe (BNSF) owns and operates a mainline dual-track from Portland to Seattle. Union Pacific owns and operates a single mainline track with two-way train operations between Tacoma and Seattle. BNSF owns and operates tracks that extend north from downtown Seattle to Snohomish County and then east to Spokane. A connecting spur, operated by the Ballard Terminal Rail Company, serves the Ballard and the western ship canal area. BNSF trains consist of 20 double-stack cars and range up to 5,500 feet in length; Union Pacific has 28 double-stack cars in trains up to 7,700 feet long.

Rail-line capacity depends on train length, operating speeds, the number of switch crossover points, and whether the line has one- or two-way traffic. Current train speed limits in the City are 10, 20, or 40 mph depending on the segment.

There are three truck-to-train intermodal terminals serving the South Harbor area: Burlington Northern Santa Fe operates the Seattle International Gateway yard north of S. Hanford Street, Union Pacific operates the Seattle Yard north of the Georgetown neighborhood, and the Port of Seattle operates an intermodal facility at Terminal 18. North of downtown Seattle is BNSF's Interbay rail yard.

Air Transportation

There are three commercial aircraft landing facilities in the greater Seattle metropolitan area: Seattle-Tacoma International Airport (Sea-Tac), operated by the Port of Seattle and located in the City of SeaTac; the Lake Union seaplane base in Seattle; and the Lake Washington seaplane base near Kenmore. Sea-Tac's facilities include two instrument runways, 69 loading gates, one main and two satellite terminals, and 4.5 miles of intra-airport roads. Future plans include construction of a third parallel runway and expansion of the terminal and parking facilities. Sea-Tac accommodates over 55 airlines, including 14 international passenger carriers and 15 all-cargo carriers. In 1998 there were 407,576 aircraft operations at Sea-Tac, and this is expected to increase to 474,000 operations by 2010.

The majority of general aviation flights take off and land either at King County International Airport (Boeing Field) or at one of the 11 active privately-operated helistops and heliports around the city. Boeing Field has one 10,000-foot runway with an instrument landing system and one 3,700-foot runway. The number of flight operations at Boeing Field was 422,000 in 1994, and 371,000 in 1997. There were over 6,000 operations at the privately-owned helistops and heliports in Seattle during 1990.

Water Transportation

The Washington State Ferry (WSF) system operates two terminals in Seattle -- Colman Dock in downtown Seattle, and the Fauntleroy terminal in West Seattle. Passenger-and-vehicle service is provided on two ferry routes from Colman Dock -- to Bainbridge Island and to Bremerton; passenger-only boats also operate between Colman Dock and Vashon Island, and Colman Dock and Bremerton. Passenger-and-vehicle ferries link Fauntleroy with Vashon Island and Southworth.

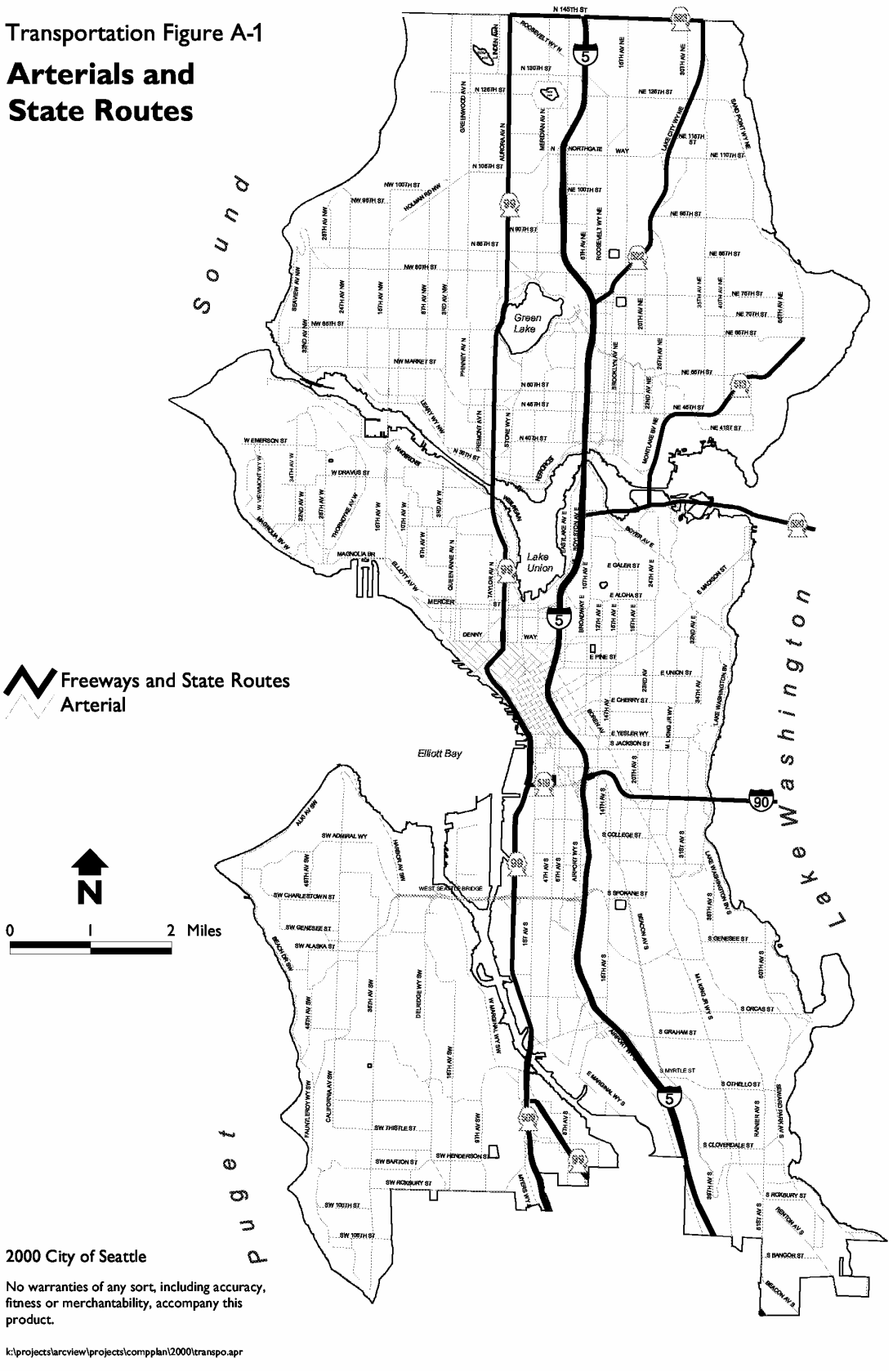
The Victoria Clipper operates between one to four round trips daily, depending on the season, between Seattle and Victoria on passenger-only catamarans.

Other Intermodal Facilities

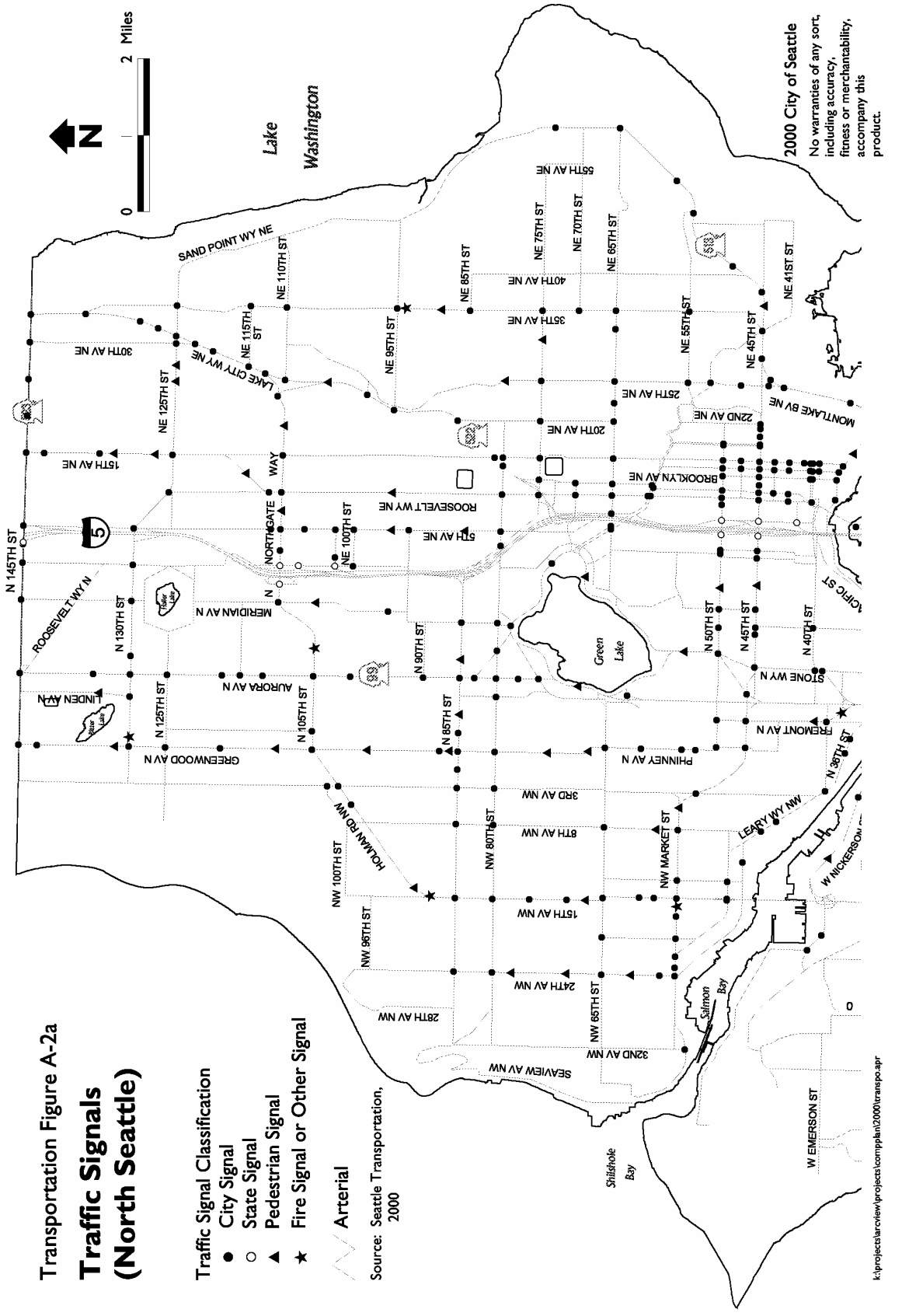
The Port of Seattle operates and supports marine, rail, and air intermodal facilities. Port of Seattle facilities include 25 commercial marine terminals, 7 container terminals with 23 container cranes, a warehouse complex and distribution center, and a deep-draft grain terminal. Services are offered by about 100 steamship operators and agents; about 30 tug and barge operators; about 100 truck and warehouse operators; and Burlington Northern Santa Fe and Union Pacific railroads, operating intermodal yards. Transportation Figure A-13 shows the Port of Seattle facilities located in Seattle.

Transportation Figure A-1

Arterials and State Routes

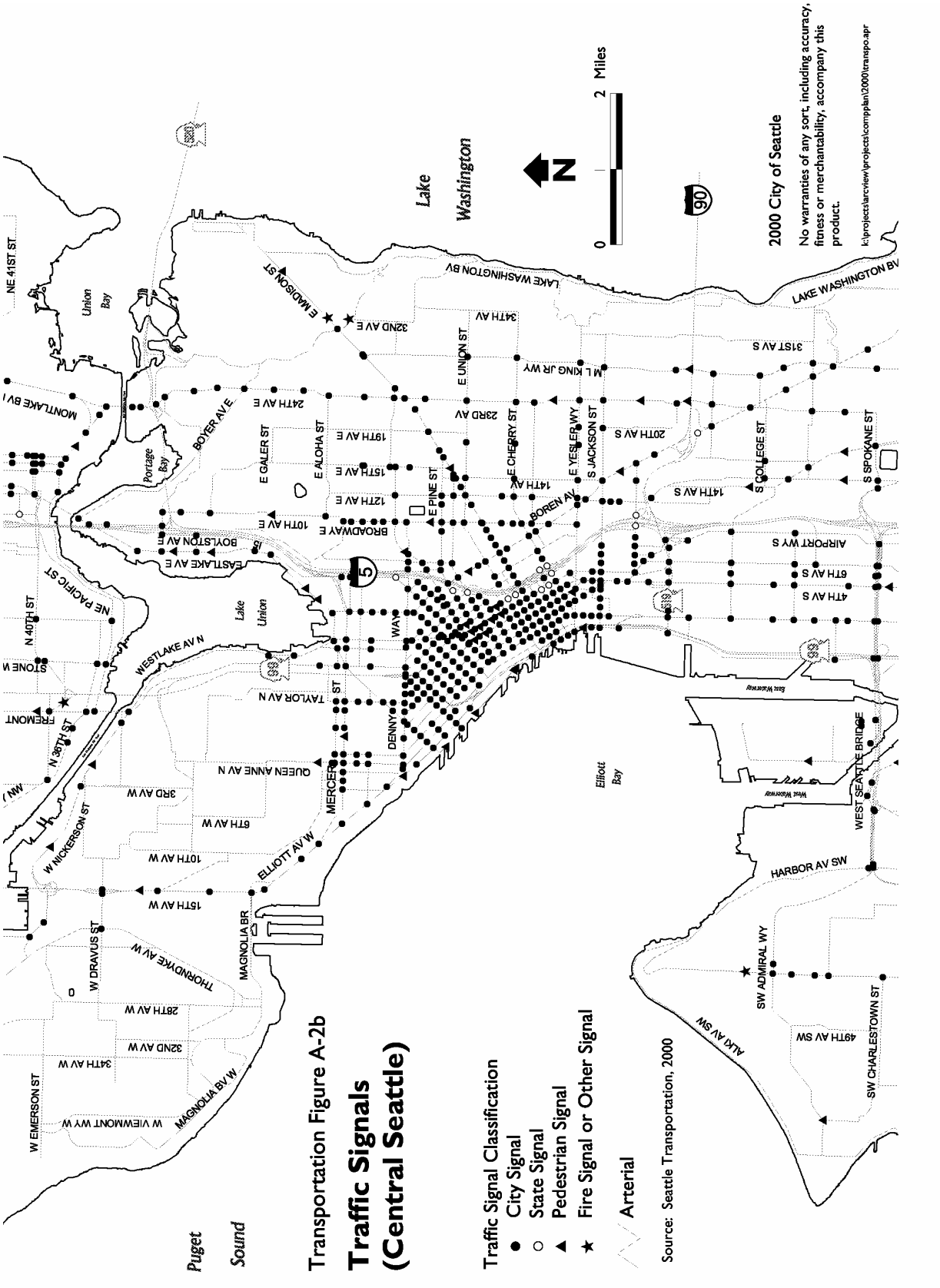


k:\projects\arcview\projects\compplan\2000\transpo.apr



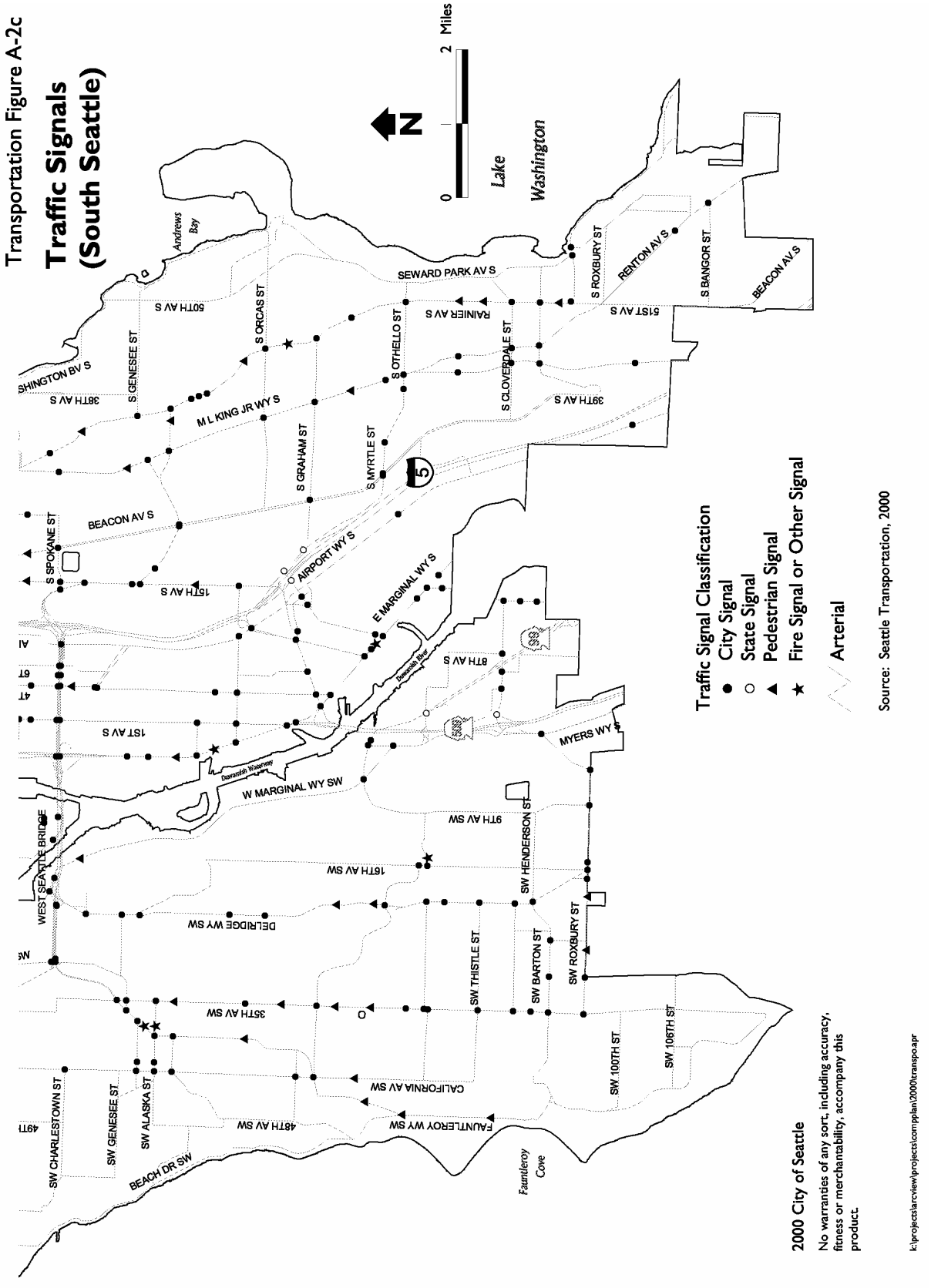
Transportation Figure A-2a

Traffic Signals (North Seattle)


Transportation Figure A-2b
Traffic Signals
(Central Seattle)
Traffic Signal Classification
City Signal
State Signal
Pedestrian Signal
Fire Signal or Other Signal
Arterial
Source: Seattle Transportation, 2000
2000 City of Seattle
No warranties of any sort, including accuracy, fitness or merchantability, accompany this product.
k:\projects\arcview\projects\comprplan\2000\transpo.apr
0
2 Miles
N
Lake Washington
Puget Sound
Union Bay
Portage Bay
Lake Union
Elliott Bay
LAKE WASHINGTON BV
E MADISON ST
32ND AV E
34TH AV
E UNION ST
M L KING JR WY
31ST AV S
MONTLAKE BV E
24TH AV E
23RD AV
20TH AV S
BOYER AV E
E GALER ST
E ALOHA ST
19TH AV E
15TH AV E
12TH AV E
E PINE ST
14TH AV
E CHERRY ST
E YESLER WY
S JACKSON ST
14TH AV S
S COLLEGE ST
S SPOKANE ST
BOREN AV
BROADWAY E
10TH AV E
BOYLSTON AV E
EASTLAKE AV E
AIRPORT WY S
6TH AV S
4TH AV S
NE PACIFIC ST
N 40TH ST
WESTLAKE AV N
TAYLOR AV N
DENNY WAY
STONE W
FREMONT
N 36TH ST
QUEEN ANNE AV N
MERCER ST
3RD AV W
6TH AV W
W NICKERSON ST
10TH AV W
ELLIOTT AV W
15TH AV W
MAGNOLIA BR
W DRAVUS ST
THORNDYKE AV W
28TH AV W
32ND AV W
34TH AV W
W EMERSON ST
W VIEWMONT WY W
MAGNOLIA BV W
WEST SEATTLE BRIDGE
HARBOR AV SW
SW ADMIRAL WY
ALKI AV SW
49TH AV SW
SW CHARLESTOWN ST

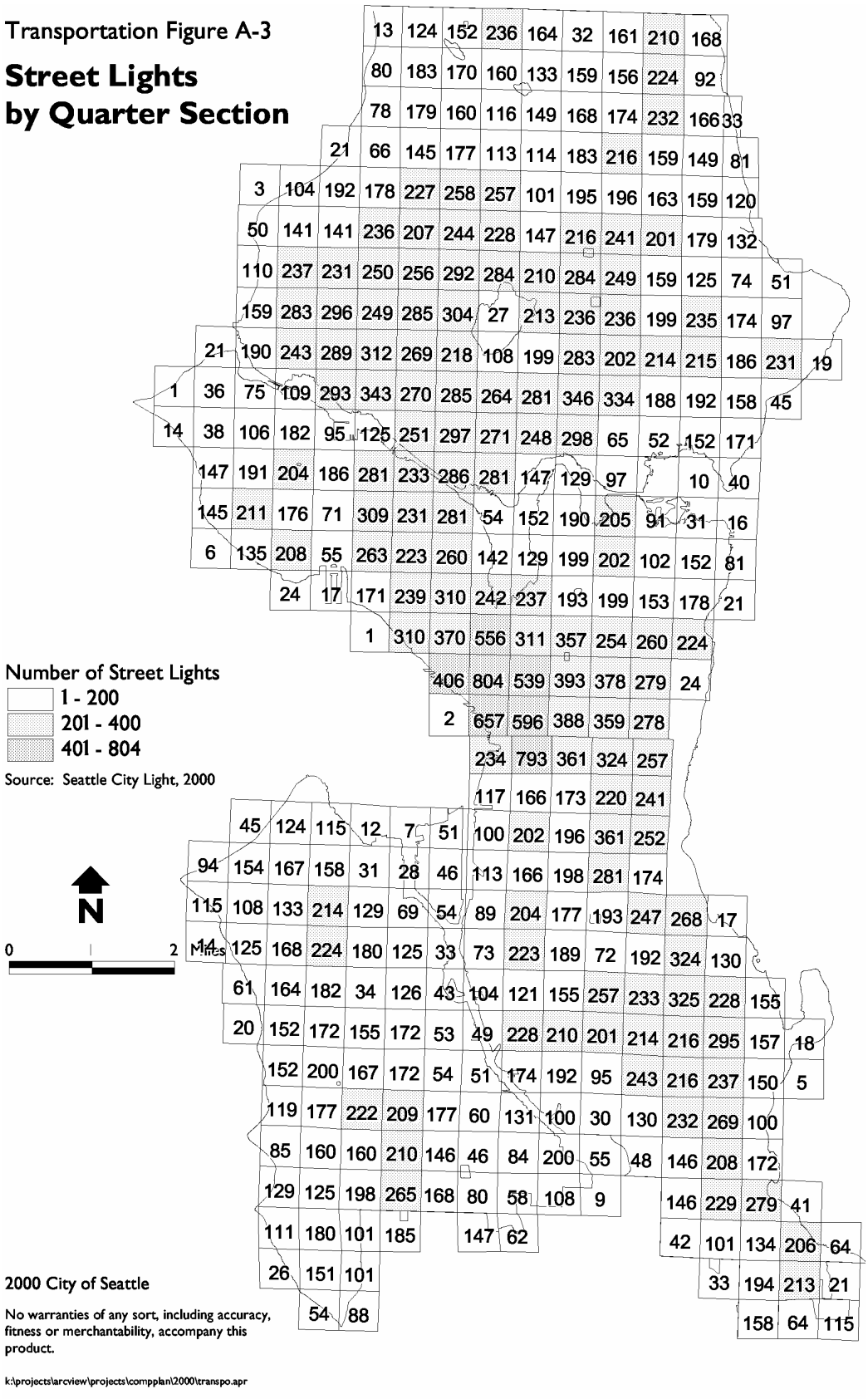
Transportation Figure A-2c

Traffic Signals (South Seattle)



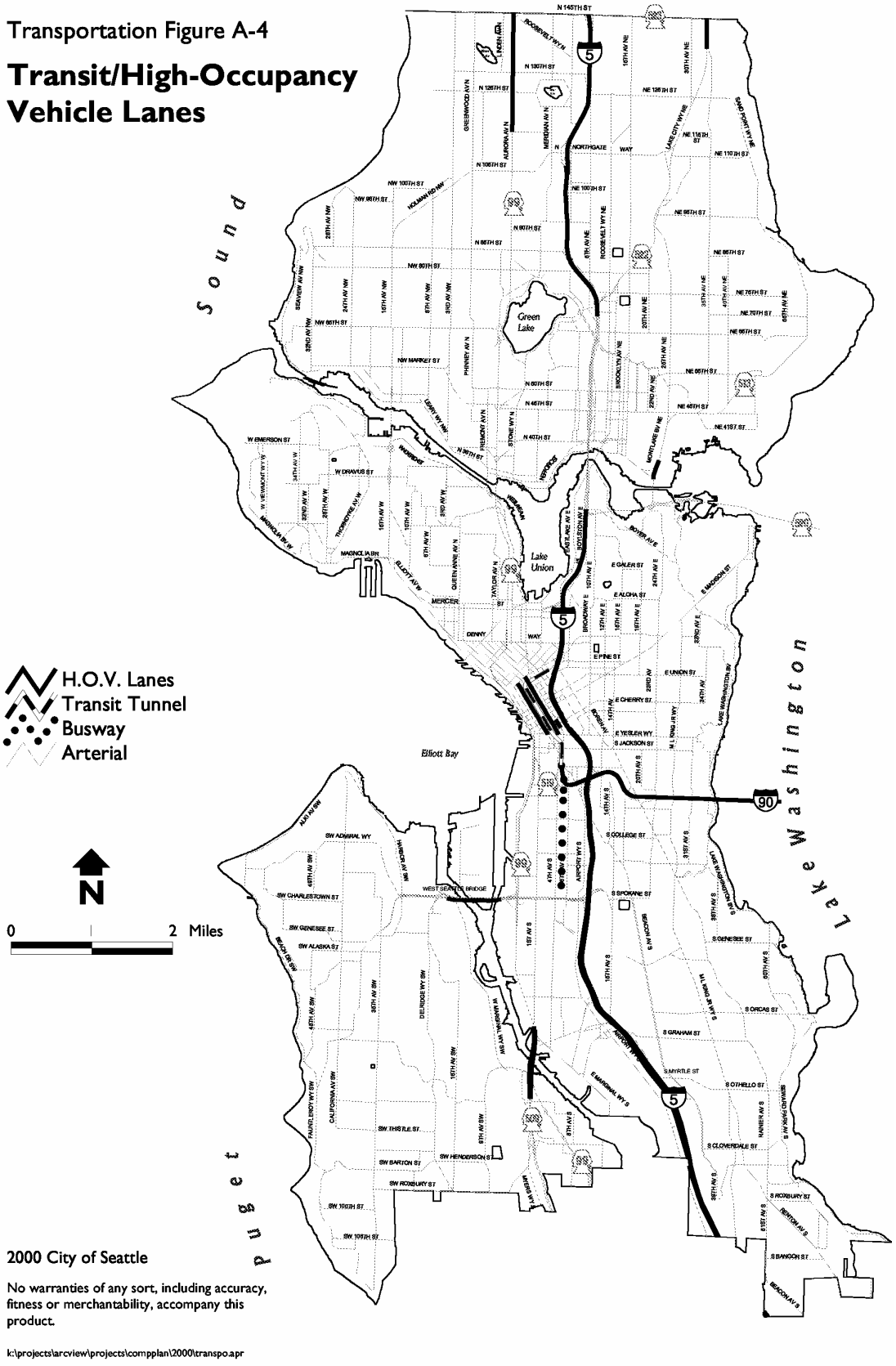
Transportation Figure A-3

Street Lights by Quarter Section



Transportation Figure A-4

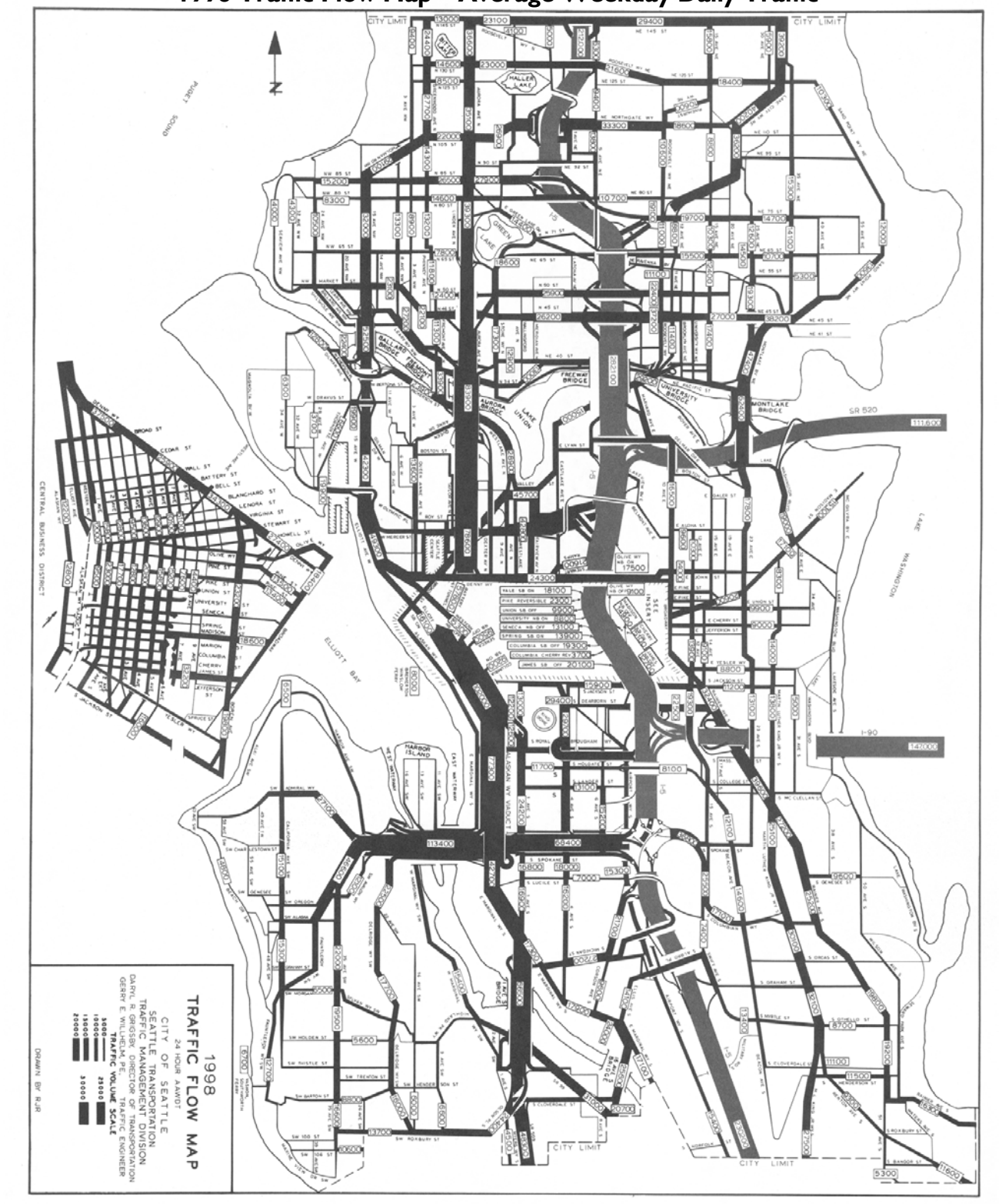
Transit/High-Occupancy Vehicle Lanes



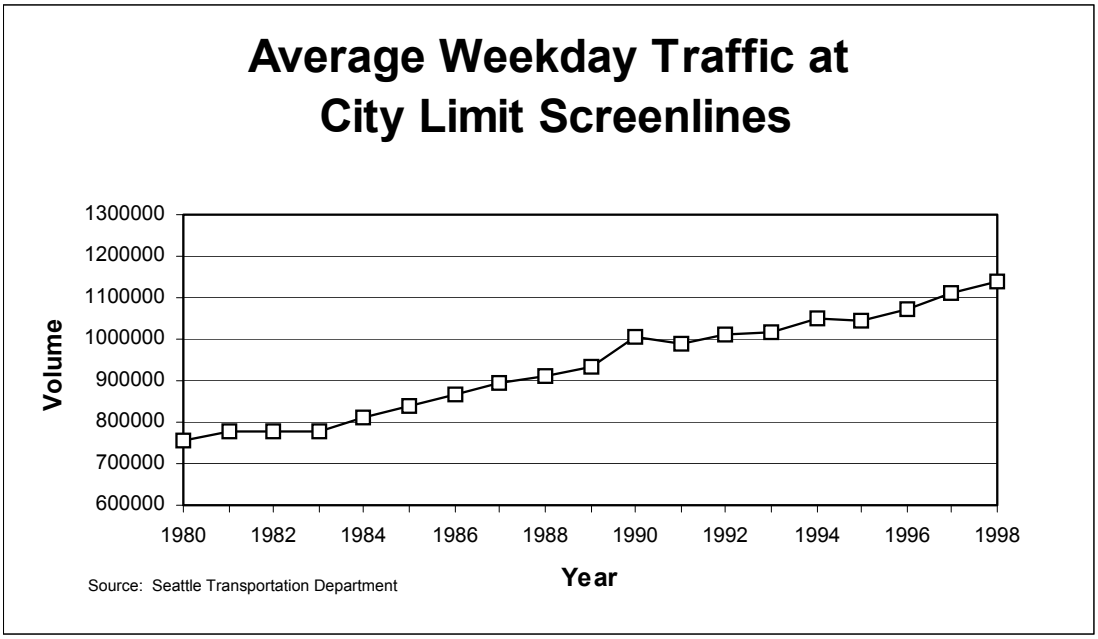
k:\projects\arcview\projects\compplan\2000\transpo.apr

Transportation Figure A-5

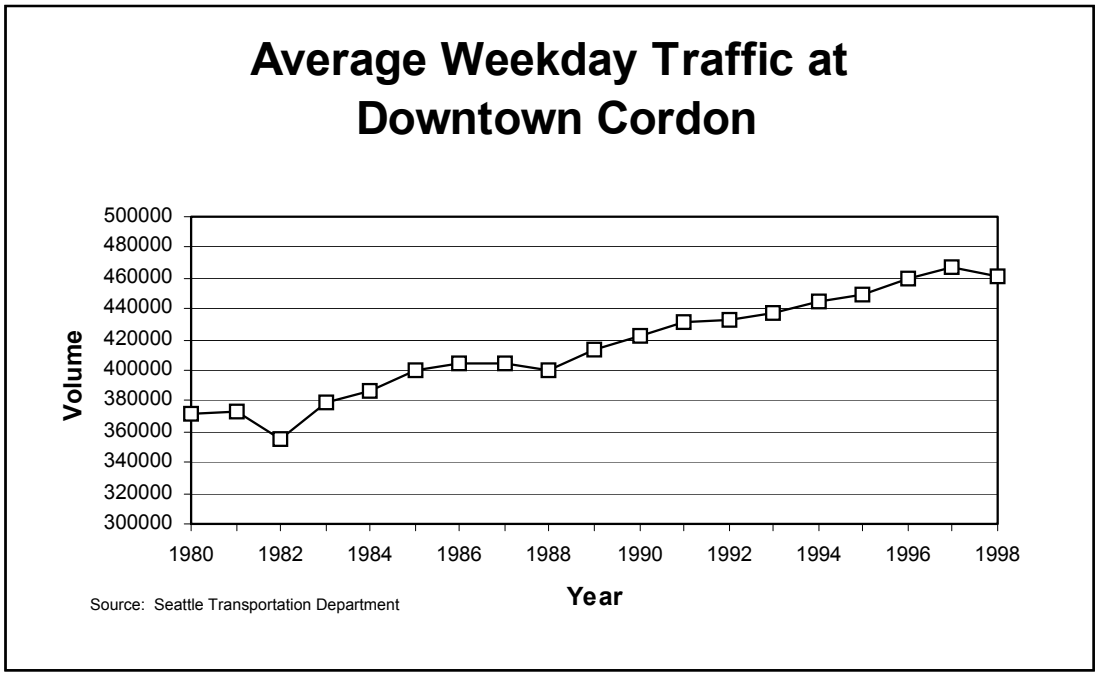
1998 Traffic Flow Map – Average Weekday Daily Traffic



Transportation Figure A-6

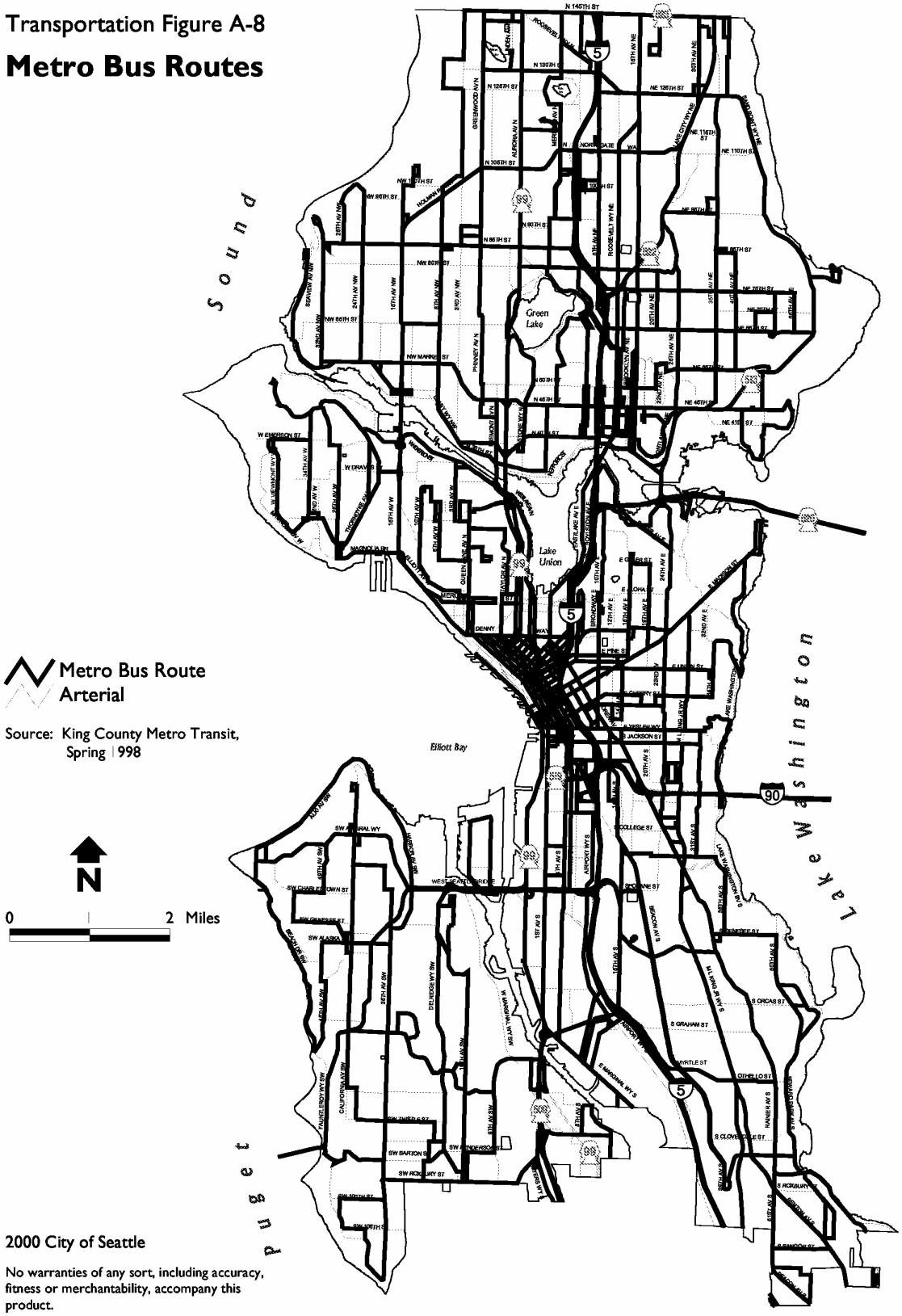


Transportation Figure A-7



Transportation Figure A-8

Metro Bus Routes

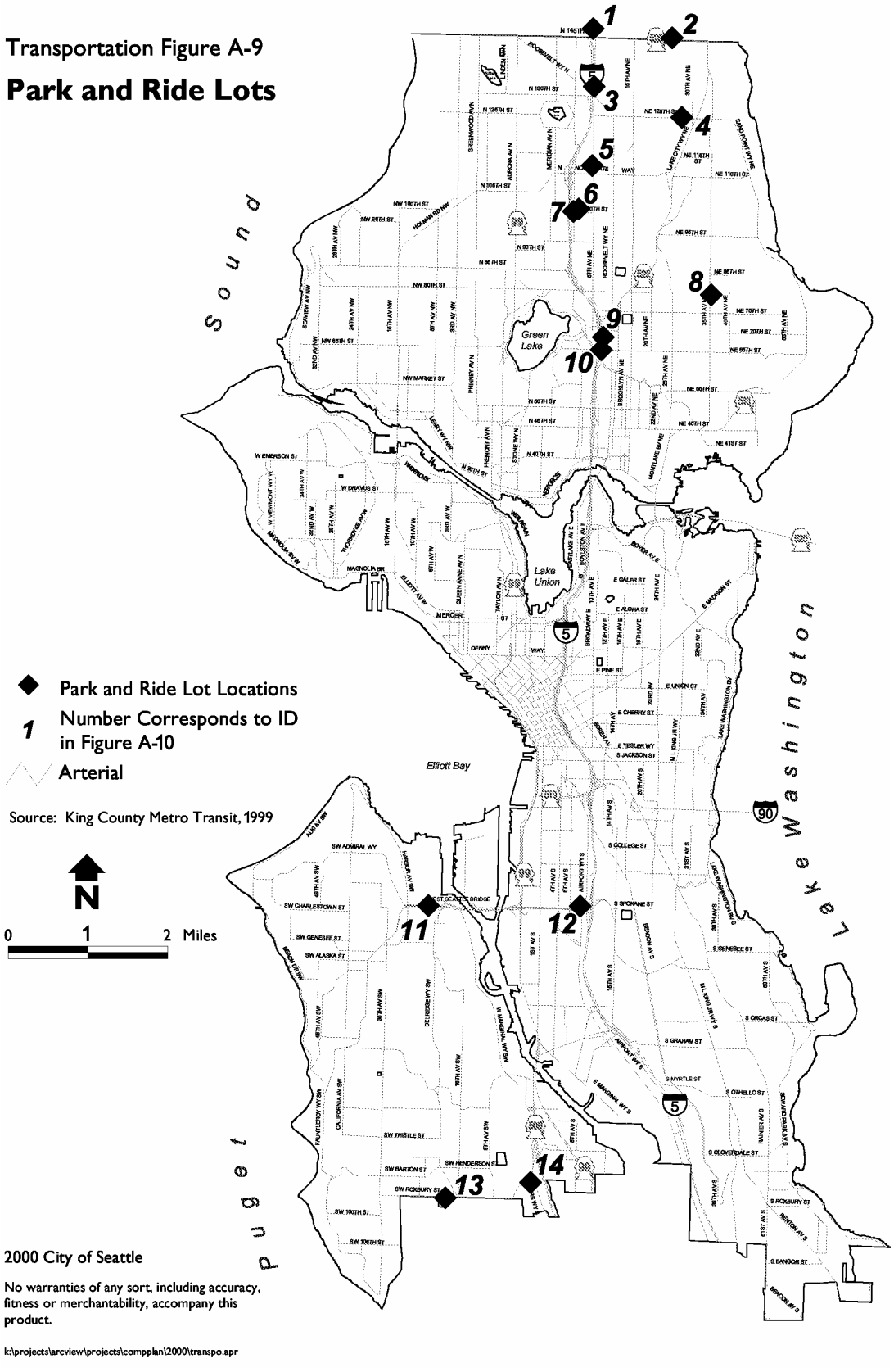


Source: King County Metro Transit, Spring 1998

k:\projects\arcview\projects\compplan\2000\transpo.apr

Transportation Figure A-9

Park and Ride Lots



k:\projects\arcview\projects\compplan\2000\transpo.apr

Transportation Figure A-10

Park-and-Ride Lot Utilization

ID	Park-and-Ride Location	Address	Number of Parking Stalls (1999)
1	North Jackson Park	14711 5th Ave NE	68
2	Shoreline United Methodist	NE 145th St/25th Ave NE	20
3	Fifth Ave NE/NE 133rd St	Fifth Ave NE/NE 133rd St	47
4	Our Savior Lutheran Church	NE 125th/27th Ave NE	21
5	Northgate	11203 5th Ave NE	512
6	Northgate Transit Center	10200 1st Ave NE	296
7	North Seattle	10001 1st Ave NE	140
8	Wedgewood Presbyterian	NE 80th St/35th Ave NE	24
9	Calvary Temple Church	6810 8th Ave NE	50
10	I-5 / NE 65th St	6601 8th Ave NE	718
11	Southwest Spokane St	26th Ave SW & SW Spokane	62
12	Airport Way / Spokane St	Airport Way/Spokane St	25
13	Holy Family Church	SW Roxbury/20th SW	36
14	Olson Way / Myers	9000 Olson Pl SW	562

Source: Metro, July 1993. (Second Quarter Statistics)

Transportation Figure A-11

Bicycle Facilities, 1994

Routes	Miles
Bicycle Paths (Multi-use)	27.5
Duwamish River (Duwamish Head to Michigan St)	4.0
Harbor Island/West Seattle Bridge	1.0
Interstate 90 Path	3.5
Waterfront/Elliott Bay/Interbay	4.0
Burke Gilman Trail	14.0
South Lake Union	1.0
Bicycle Lanes	15.1
Alki	2.5
Green Lake	4.0
Ravenna	1.0
Interstate 90 Extension (Dearborn)	1.0
Dexter/7th	2.2
Alaskan Way	2.0
Gilman/Government Way	1.6
Martin Luther King Way	0.8
Bicycle Routes (Signed)	83.6
Alki	15.5
Duwamish (City limit to Michigan Street)	3.4
Sea-Tac Route	13.0
Lake Washington Boulevard	19.7
Magnolia Loop	7.5
Ravenna	2.5
8th Avenue NW (Burke Gilman Trail to 3rd Avenue NW)	5.5
Sand Point Way (Burke Gilman Trail By-pass Route)	10.0
Lake Union Route	2.0
Ballard/Seaview Route	4.5

Source: Seattle Engineering Department, 1994.

Definitions:

Bicycle Path: A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

Bicycle Lane: A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Route: A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number.

Transportation Figure A-12

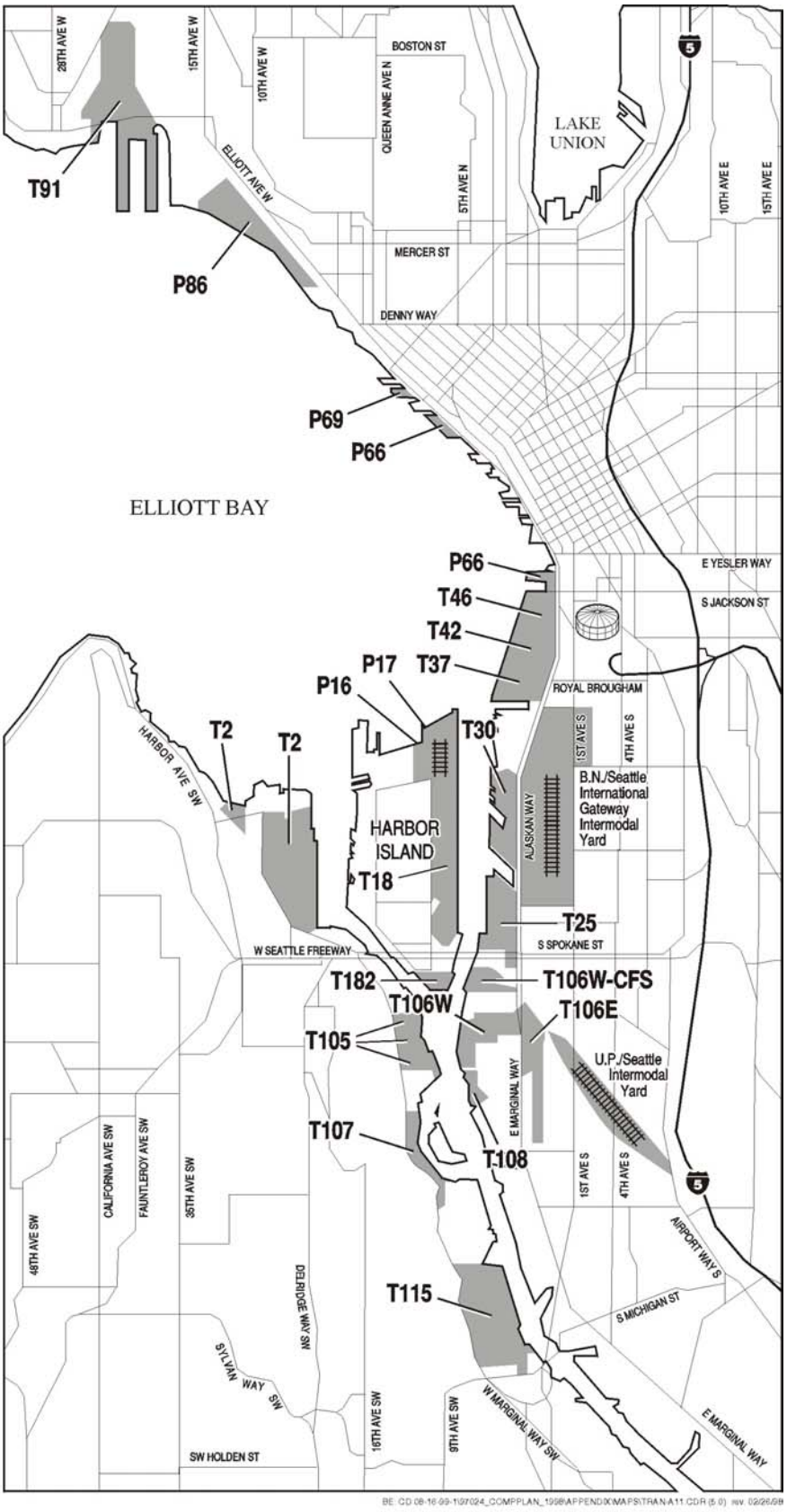
1999 Off-Street Parking Inventory

Seattle Area	Total Stalls (1999)	Percent Change in Total Stalls 1989-1999	Average Occupancy Rate	Annual % Change in Average Occup. Rate 1989 - 1999	Annual % Change in Average Occup. Rate 1996-1999	Average Two Hour Rate	Average Daily Rate	Average Monthly Rate
Central Business District	50863	+19.1%	78.2%	+0.4%	-1.3%	$6.20	$14.39	$173.57
Lower Queen Anne	16482	+15.3%	59.3%	+0.4%	+0.7%	$4.50	$6.39	$89.08
First Hill	10714	+30.0%	76.7%	-0.5%	+0.2%	$3.20	$11.14	$71.76

N/A = Not Available Source: Puget Sound Regional Council, April-May 1999.

Transportation Figure A-13

Port of Seattle Facilities



Port Facility
P - Pier
T - Terminal

Source: Western Washington Ports Handbook 1992-1993

N

0 1/2 1
Scale in Miles

Transportation Appendix B

Land Use Assumptions Used in Estimating Travel

To estimate future travel levels, assumptions were made for a variety of factors related to future population, employment, and transportation facilities. These include the number and geographic distribution of both households and employment in Seattle and the region, characteristics of households and jobs (e.g., number of residents per household, household income), and the transportation network (e.g., streets, transit routes). Then, a computer model was used to predict the total number of person-trips between various zones, the number of trips that would use various modes (e.g., car, bus, bike, walk), and the resulting vehicle traffic volumes on various streets throughout the city.

Existing Conditions

In 1990, there were about 516,000 people living in Seattle; 1993 state estimates place the population at about 528,000. Seattle's daytime population is much larger than its residential population, currently totaling about 723,000, of which about 488,000 are people in jobs. These numbers reflect about 60,000 Seattle residents who work outside Seattle, 267,000 people who come to Seattle from other places for jobs, and 236,000 people living in Seattle who do not hold jobs.

Seattle covers about 54,000 acres of land. Most areas of the city are of predominantly one type of land use (e.g., residential, commercial, or industrial). About 40 percent of the city's land area is occupied by residential uses. In 1990, there were a total of about 249,000 housing units in the city. Estimates in 1993 place the total number of housing units in the city at about 257,000. The area north of the ship canal has more of its land area occupied by housing than mid-Seattle (south of the ship canal to I-90) or south Seattle (south of I-90).

Street rights-of-way take up the next largest amount of land, almost 26 percent. Commercial and industrial areas, where most of the jobs in the city are located, occupy about 13 percent of the land area. Parks occupy nine percent; cemeteries, reservoirs, and other uses occupy six percent; and six percent of the land is vacant.

Regional Land Use Assumptions

The Puget Sound Regional Council (PSRC) conducts regional planning for the four-county (Snohomish, King, Pierce, and Kitsap) central Puget Sound region. The PSRC's Vision 2020 Growth Strategy and Transportation Plan presents a vision and array of strategies designed to achieve goals of growth management, transportation demand management, and improved transportation investment decisions. The PSRC provides population and employment forecasts for the region, focusing future population and employment growth into urban centers.

The PSRC also provides population and employment forecasts for the year 2010. Seattle's transportation model used 2010 "Vision 1" population and employment allocations for the region. Vision 1 assumes 14 urban centers in the region, and assumes a large public transportation investment as outlined in the October 1992 Regional Transit Project (RTP) Draft System Plan, with additional rail service to Renton. The four-county projections for 2010 are:

Population: 3,610,378

Households: 1,517,204

Employment: 1,982,055

Seattle Land Use Assumptions (Section amended 7/96)

Within Seattle, the upper limits of the growth targets in the adopted Plan for population, households, and employment were used to estimate future travel. These targets call for an additional 72,000 people, 60,000 households and 146,600 jobs over the 20-year life of this plan. This growth was allocated within the city as follows (using locations and adopted or unadopted boundaries of centers and villages as in the plan):

	Household Growth	Employment Growth
Urban centers	27,000 (45%)	95,300 (65%)
Hub urban villages	9,000 (15%)	22,000 (15%)
Residential villages	9,000 (15%)	14,700 (10%)
Areas outside centers and villages	15,000 (25%)	
Manufacturing/industrial centers	--	14,700 (10%)
TOTAL	60,000 (100%)	146,600 (100%)

Transportation Appendix C

Traffic Forecasts

To analyze the traffic impacts of the Comprehensive Plan, the City modeled both the Plan itself and an Alternative Scenario. The Alternative Scenario assumes the same total growth in population and employment Citywide as in the Plan, but distributes that growth based on zoning capacity alone, without regard to Urban Center or Urban Village designations. In addition, the Alternative Scenario excludes policies included in the Plan that discourage use of single-occupant cars and encourage transit and non-motorized modes, which affect mode split assumptions.

Region-wide and city-limit traffic volume forecasts for the Comprehensive Plan and for the Alternative Scenario are as follows:

Total vehicle-miles-of-travel (VMT) for the region (per day):

1990 estimate	70 million	
2010 forecasts:	Comprehensive Plan	93 million (+ 33%)
	Alternative Scenario	100 million (+ 43%)

Traffic volume at north city limit (vehicles per day):

1990 estimate	327,000	
2010 forecasts:	Comprehensive Plan	374,000 (+ 14%)
	Alternative Scenario	430,000 (+ 31%)

Traffic volume at south city limit (vehicles per day):

1990 estimate	409,000	
2010 forecasts:	Comprehensive Plan	476,000 (+ 16%)
	Alternative Scenario	564,000 (+ 38%)

Traffic volume at east city limit (SR 520 and I-90) (vehicles per day):

1990 estimate	237,000	
2010 forecasts:	Comprehensive Plan	271,000 (+ 14%)
	Alternative Scenario	290,000 (+ 22%)

Regional transit trips as a percent of total motorized trips:

1990 estimate	3 percent	
2010 forecasts:	Comprehensive Plan	6 percent
	Alternative Scenario	3 percent (no change)

To analyze the transportation effects of the Comprehensive Plan goals and policies on the City's arterial streets in Urban Centers and in Urban Village areas, traffic conditions were analyzed for a system of 42 screenlines, shown in Transportation Figure A-14. These screenlines functionally cover the entire City, including Urban Centers and areas identified for future designation as Urban Villages. The Comprehensive Plan's level-of-service (LOS) system uses a similar screenline system, with 30 of the same screenlines. Twelve screenlines were added for this traffic forecast analysis to supplement the data in Urban Centers.

Traffic volumes were forecasted for arterial streets for the year 2010 under both the Comprehensive Plan and the Alternative Scenario. These forecasted volumes were summed for all arterials crossing a particular screenline, and this screenline volume was compared to the sum of the "planning capacities" for the arterials crossing the screenline, yielding a ratio of volume-to-capacity (v/c) for each direction of traffic for each screenline.

The screenline methodology was used both for the Comprehensive Plan's level-of-service system to judge the performance of the arterial system, and for the traffic forecast analysis described in this Appendix. This system was selected because it steps back from the micro-level focus of traditional intersection LOS analysis, and recognizes explicitly the broader geographic impacts of development and travel patterns. The system recognizes that no single intersection or arterial operates in isolation. Motorists have choices, and they select particular routes based on a wide variety of factors. If traffic congestion on one arterial increases, it may not make sense to expand the capacity of that arterial. The City, instead, may want to shift traffic to a nearby under-used arterial, or to expand capacity on a different nearby arterial, or to implement measures to reduce travel demand -- or a combination of these strategies. Accordingly, this analytic methodology focuses on a "traffic-shed," an area where arterials among which drivers logically can choose are organized for functional analysis.

Transportation Figure A-15 lists, for each screenline, the forecasted year 2010 v/c ratio with the Comprehensive Plan, and the forecasted year 2010 v/c ratio with the Alternative Scenario. (This Figure supplements the more limited information provided in Transportation Figure 3 in Section E. of the Comprehensive Plan Transportation Element.[1])

As can be seen in Transportation Figure A-15, the forecasted screenline v/c ratios for the year 2010 under the Comprehensive Plan range from 0.23 to 1.13. For each screenline that serves as a level-of-service (LOS) screenline, the forecasted year 2010 v/c ratio is below the LOS standard established for that screenline. For all screenlines, the forecasted year 2010 v/c ratio under the Alternative Scenario is higher than the corresponding v/c ratio under the Comprehensive Plan. For some screenlines, the year 2010 v/c ratio values under the Alternative Scenario exceed the established LOS standards.

[1] As with the region-wide and city-limit traffic volume forecasts described earlier in this Appendix, the v/c ratios in Transportation Figure A-15 are based on the output of the City's transportation model. The traffic volume values produced from the model for this analysis differ slightly from values produced in preparing the Comprehensive Plan adopted in July 1994 because of updates to the model, including a revised zone structure and revised employment estimates.

By analyzing the forecasted year 2010 v/c ratios under the Comprehensive Plan at screenlines in or near Urban Centers, one can evaluate the effects of the Comprehensive Plan goals and policies on the transportation systems in the Urban Centers. Each of the five Urban Centers is addressed below.

Downtown: Screenlines 10.11, 12.12, A1, A2, and A3 pass through or along the edge of the Downtown Urban Center, some encompassing north-south avenues, and some encompassing east-west streets. For all five of these screenlines, the year 2010 v/c ratios under the Comprehensive Plan are below 1.0. This means that for screenlines 10.11 and 12.12, the year 2010 v/c ratios are also below the established LOS standards of 1.0 for screenline 10.11 and 1.2 for screenline 12.12.

Seattle Center: For the Seattle Center Urban Center, screenline A4 is an east-west screenline while screenline A5 is drawn north-south through the Urban Center. For both of these screenlines, the year 2010 v/c ratios under the Comprehensive Plan are well below 1.0.

First Hill/Capitol Hill: Screenlines A6, A7, and A8 are drawn through the First Hill/ Capitol Hill Urban Center. Screenline 12.12, on the east edge of the Downtown Urban Center, is on the west edge of the First Hill/Capitol Hill Urban Center. For all four of these screenlines, the year 2010 v/c ratios under the Comprehensive Plan are well below 1.0.

University District: For the University District Urban Center, screenlines 5.16 and 13.13 cover the south and west boundaries of the Urban Center, while screenline A9 passes east-west through the Center and screenline A10 is drawn north-south through the Center. The year 2010 v/c ratios under the comprehensive Plan for all four of these screenlines are below 1.0. The forecasted year 2010 v/c ratios for screenline 5.16 are nearly 1.0, compared to the LOS standard of 1.2. These high v/c ratios reflect traffic congestion around the University District, much of which is due to through traffic.

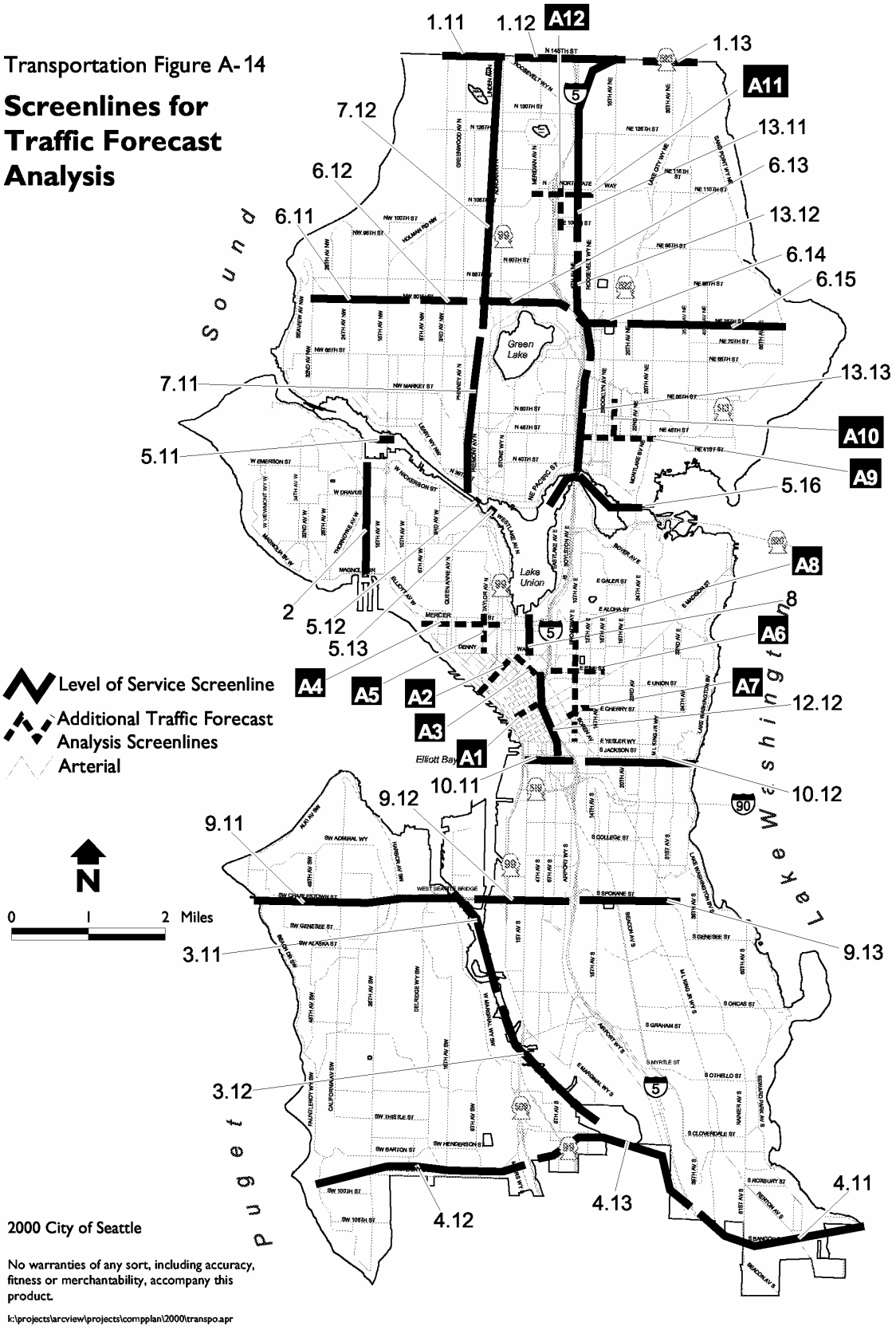
Northgate: For the Northgate Urban Center, screenline A11 is drawn east-west through the Center, while screenline A12 passes north-south through the Center. The year 2010 v/c ratios for both of these screenlines are well below 1.0.

The Comprehensive Plan includes policies to improve transit service and related transit capital facilities, as well as to improve non-motorized transportation facilities, to afford ways for people to avoid the traffic congestion inherent in dense Urban Centers and Urban Village areas. In this way, people may avoid the congestion reflected in higher v/c ratios across some screenlines.

As this analysis of transportation impacts demonstrates, the forecasted year 2010 screenline volume-to-capacity ratios under the Comprehensive Plan do not exceed the established LOS standards for any screenlines. For the additional screenlines created for this traffic forecast analysis, the forecasted year 2010 v/c ratios are similarly within acceptable ranges. As provided in Comprehensive Plan Policy T23, when the calculated v/c ratio for a screenline approaches the LOS standard for that screenline, the City will pursue strategies to reduce vehicular travel demand across the screenline and/or increase the operating capacity across the screenline. Based on the analysis of screenlines described here, there are currently no additional capacity or facility needs necessitated by the Plan.

Transportation Figure A-14

Screenlines for Traffic Forecast Analysis



k:\projects\arcview\projects\compplan\2000\transpo.apr

Transportation Figure A-15

Screenline Volume-to-Capacity Ratios

Level-of-Service Screenline No.	Screenline Location	Segment	LOS Standard	Direction	2010 V/C Ratios	
					Comp Plan	Alternative
1.11	North City Limit	3rd Ave NW to Aurora Av N	1.20	NB	1.05	1.29
				SB	0.57	0.70
1.12	North City Limit	Meridian Av N to 15th Av NE	1.20	NB	0.86	1.12
				SB	0.36	0.41
1.13	North City Limit	30th Av NE to Lake City Wy NE	1.20	NB	1.02	1.20
				SB	0.66	0.72
2	Magnolia		1.00	EB	0.52	0.58
				WB	0.68	0.74
3.11	Duwamish River	West Seattle Fwy and Spokane St	1.20	EB	0.50	0.59
				WB	0.91	1.09
3.12	Duwamish River	1st Ave S and 16th Ave S	1.20	NB	0.55	0.66
				SB	0.86	1.05
4.11	South City Limit	ML King Jr Wy to Rainier Av S	1.00	NB	0.33	0.39
				SB	0.49	0.77
4.12	South City Limit	Marine Dr SW to Meyers Wy S	1.00	NB	0.28	0.33
				SB	0.42	0.52
4.13	South City Limit	SR 99 to Airport Wy S	1.00	NB	0.24	0.31
				SB	0.54	0.78
5.11	Ship Canal	Ballard Bridge	1.20	NB	1.13	1.33
				SB	0.72	0.81
5.12	Ship Canal	Fremont Bridge	1.20	NB	1.00	1.29
				SB	0.75	0.99
5.13	Ship Canal	Aurora Av N	1.20	NB	0.95	1.18
				SB	0.67	0.80
5.16	Ship Canal	University and Montlake Bridges	1.20	NB	0.98	1.19
				SB	0.96	1.13
6.11	South of NW 80th St	Seaview Av NW to 15th Av NW	1.00	NB	0.47	0.54
				SB	0.32	0.37
6.12	South of N(W) 80th St	8th Av NW to Greenwood Av N	1.00	NB	0.47	0.65
				SB	0.27	0.37
6.13	South of N(E) 80th St	Linden Av N to 1st Av NE	1.00	NB	0.65	0.78
				SB	0.48	0.55
6.14	South of NE 80th St	5th Av NE to 15th Av NE	1.00	NB	0.81	0.99
				SB	0.36	0.41
6.15	South of NE 80th St	20th Av NE to Sand Point Wy NE	1.00	NB	0.43	0.57
				SB	0.28	0.35

Transportation Figure A-15 (cont'd)

Screenline Volume-to-Capacity Ratios

7.11	West of Aurora Ave	Fremont Pl N to N 65th St	1.00	EB	0.48	0.49
				WB	0.62	0.70
7.12	West of Aurora Ave	N 80th St to N 145th St	1.00	EB	0.40	0.46
				WB	0.57	0.64
8	South of Lake Union		1.20	EB	0.86	0.92
				WB	0.94	1.01
9.11	South of Spokane St	Beach Dr SW to W Marginal Wy SW	1.00	NB	0.48	0.52
				SB	0.69	0.81
9.12	South of Spokane St	E Marginal Wy S to Airport Wy S	1.00	NB	0.44	0.53
				SB	0.58	0.76
9.13	South of Spokane St	15th Av S to Rainier Av S	1.00	NB	0.44	0.57
				SB	0.79	1.02
10.11	South of S Jackson St	Alaskan Wy S to 4th Av S	1.00	NB	0.68	0.78
				SB	0.66	0.80
10.12	South of S Jackson St	12th Av S to Lakeside Av S	1.00	NB	0.39	0.50
				SB	0.71	0.93
12.12	East of CBD		1.20	EB	0.59	0.67
				WB	0.55	0.58
13.11	East of I-5	NE Northgate Wy to NE 145th St	1.00	EB	0.74	0.83
				WB	0.61	0.70
13.12	East of I-5	NE 65th St to NE 80th St	1.00	EB	0.46	0.55
				WB	0.49	0.58
13.13	East of I-5	NE Pacific St to NE Ravenna Blvd	1.00	EB	0.59	0.69
				WB	0.76	0.88

Transportation Figure A-15 (Cont'd)

Screenline Volume-to-Capacity Ratios

Traffic forecast Analysis Screenline No.	Screenline Location	Segment	Direction	2010 V/C Ratios	
				Comp Plan	Alternative
A1	North of Seneca St	1st Av to 6th Av	NB	0.82	0.92
			SB	0.93	1.12
A2	North of Blanchard	Elliott Av to Westlake Av	NB	0.39	0.46
			SB	0.40	0.53
A3	East of 9th	Lenora St to Pike St	EB	0.40	0.53
			WB	0.23	0.29
A4	South of Mercer	Elliott Av W to Aurora Av N	NB	0.71	0.82
			SB	0.63	0.75
A5	East of 5th Av N	Denny Way to Valley St	EB	0.35	0.40
			WB	0.44	0.51
A6	North of Pine St	Melrose Av to 15th Av	NB	0.56	0.64
			SB	0.48	0.59
A7	North of James St-E Cherry St	Boren Av to 14th Av	NB	0.64	0.73
			SB	0.79	1.00
A8	West of Broadway	Yesler Wy to E Roy St	EB	0.63	0.75
			WB	0.56	0.59
A9	South of NE 45th St	7th Av NE to Montlake Blvd NE	NB	0.78	0.93
			SB	0.55	0.64
A10	East of 15th Ave NE	NE 45th St to NE 52nd St	EB	0.66	0.79
			WB	0.83	0.98
A11	South of Northgate Wy-N 110th St	N Northgate Wy to Roosevelt Wy NE	NB	0.51	0.73
			SB	0.47	0.49
A12	East of 1st Av NE	NE 100th St to NE Northgate Wy	EB	0.69	0.86
			WB	0.44	0.50

Transportation Appendix D

Intergovernmental Coordination Efforts

This section describes the City's intergovernmental coordination efforts during the development of the Comprehensive Plan, and potential impacts of the plan on the transportation systems of adjacent jurisdictions.

Puget Sound Regional Council

Seattle is an active member of the Puget Sound Regional Council (PSRC), which is charged with certifying that local transportation plans are consistent with regional plans and goals. The City supported PSRC's Vision 2020, a transportation/land use plan that describes linking high-density residential and employment centers throughout the region by high capacity transit and promoting a multi-modal transportation system. Vision 2020's goals are carried forward by this Comprehensive Plan.

The PSRC provides population, employment, and transportation data to Seattle and other jurisdictions -- coordination is established via this centralized information resource.

In addition, the PSRC is charged with allocating federal Intermodal Surface Transportation Efficiency Act funds. Seattle has participated in establishing the criteria and selection process to determine how funds will be distributed among transportation projects.

The City will continue to coordinate activities related to transportation planning and financing with the PSRC beyond the adoption of the Comprehensive Plan.

King County Work Groups

Countywide coordination for growth management planning has occurred through ad hoc groups organized by King County. Seattle's Planning and Engineering Departments and the Department of Construction and Land Use participate in the Transportation Work Group. Other members of the Transportation Work Group include Metro (now part of Metropolitan King County), PSRC, the Washington State Department of Transportation (WSDOT), and other cities and counties in the region. The group, and its sub-groups, provided technical information and advice to a group of city and county planning and public works directors, and contributed to the development of the Countywide Planning Policies.

The City will continue to participate in these work groups beyond the adoption of the Comprehensive Plan.

City-Sponsored Coordination Activities

The City sponsored intergovernmental coordination activities through an intergovernmental team with representatives from various City departments, Metro, King County, WSDOT, Port of Seattle, PSRC, and other interested agencies. This team contributed to the analysis and policy direction contained in this plan and participated in the review of draft products. This coordination effort will continue beyond the adoption of the Comprehensive Plan.

Impacts on Adjacent Jurisdictions

Four jurisdictions are adjacent to the City of Seattle: the City of Shoreline, King County, and the City of Lake Forest Park along Seattle's north boundary, and the City of Tukwila and King County along Seattle's south boundary. In consultation with adjacent jurisdictions, several major arterials that lie within these jurisdictions near the Seattle border were selected for analysis. For each arterial, the existing p.m. peak hour traffic volume and forecasted year 2010 traffic volume were compared to the "planning capacity" of the arterial, yielding a volume-to-capacity (v/c) ratio. The results of this analysis are shown in Transportation Figure A-16.

For all but one of the arterials shown in Transportation Figure A-16, the p.m. peak hour v/c ratio is below 1.0, indicating that there is remaining traffic capacity currently and forecasted for the future. The exception is Bothell Way N.E. just north of N.E. 145th Street, where the existing v/c is estimated to be 1.03, and the forecasted year 2010 v/c is estimated to be 1.10.

These traffic volume and v/c figures reflect not only growth under Seattle's Comprehensive Plan, but also growth in the adjacent jurisdictions and throughout the central Puget Sound region. Much of the traffic on these arterials is through traffic, with neither an origin nor a destination near the arterial.

In addition to the City of Seattle's analysis of transportation impacts on adjacent jurisdictions, as described in this section, Seattle continues to work with the adjacent jurisdictions to coordinate traffic operations and to minimize cross-boundary impacts. (Section amended 7/95)

Transportation Figure A-16

Adjacent Jurisdiction Major Arterials: PM Peak Hour Capacities, Volumes and v/c Rations

A. Major arterials just north of Seattle / King County-Shoreline-Lake Forest Park Border (145th St)

Arterial	Existing - PM Peak Hour						Comprehensive Plan - PM Peak Hour					
	Outbound			Inbound			Outbound			Inbound		
	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio
Greenwood Ave N	760	430	0.57	760	340	0.45	760	700	0.92	760	620	0.82
Westminster Way N	2600	1710	0.66	2600	930	0.36	2600	2030	0.78	2600	1000	0.38
Aurora Ave N	3060	1720	0.56	3060	910	0.30	3060	1860	0.61	3060	1000	0.33
Meridian Ave N	1030	820	0.80	1030	380	0.37	2160	930	0.43	2160	310	0.14
5th Ave NE	760	580	0.76	760	300	0.39	2160	660	0.31	2160	160	0.07
15th Ave NE	2160	1520	0.70	2160	500	0.23	2160	1830	0.85	2160	670	0.31
25th Ave NE	740	420	0.57	740	200	0.27	740	490	0.66	740	190	0.26
Bothell Way NE	2450	2520	1.03	2450	1650	0.67	2450	2690	1.10	2450	1910	0.78

B. Major arterials just south of Seattle / King County Border

Arterial	Existing - PM Peak Hour						Comprehensive Plan - PM Peak Hour					
	Outbound			Inbound			Outbound			Inbound		
	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio
SW 106th St	1030	330	0.32	1030	550	0.53	1030	340	0.33	1030	530	0.51
26th Ave SW	760	580	0.76	760	380	0.50	760	630	0.83	760	400	0.53
17th Ave SW	1930	110	0.06	1930	110	0.06	1930	270	0.14	1930	190	0.10
16th Ave SW	2160	410	0.19	2160	270	0.13	2160	460	0.21	2160	390	0.18
4th Ave SW	760	590	0.78	760	410	0.54	760	650	0.86	760	480	0.63
Myers Way S	1320	280	0.21	1320	90	0.07	1320	630	0.48	1320	120	0.09
8th Ave S	760	280	0.37	760	120	0.16	760	350	0.46	760	100	0.13
Military Rd S	2600	440	0.17	2600	350	0.13	1930	480	0.25	1930	250	0.13
14th Ave S	2600	1050	0.40	2600	540	0.21	2600	1250	0.48	2600	390	0.15
Beacon Ave S	760	140	0.18	760	40	0.05	760	160	0.21	760	50	0.07
Renton Ave S	1930	500	0.26	1930	210	0.11	1930	530	0.27	1930	230	0.12
Cornell Ave S	760	20	0.03	760	20	0.03	760	20	0.03	760	20	0.03
Rainier Ave S	2160	1120	0.52	2160	560	0.26	2160	1300	0.60	2160	680	0.31

Transportation Figure A-16. (Continued)

Adjacent Jurisdiction Major Arterials: PM Peak Hour Capacities, Volumes and v/c Ratios

C. Majoyr arterials just south of Seattle / Tukwila Border

Arterial	Existing - PM Peak Hour						Comprehensive Plan - PM Peak Hour					
	Outbound			Inbound			Outbound			Inbound		
	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio	Capacity	Volume	v/c Ratio
E Marginal Way S	1800	670	0.37	1800	740	0.41	1800	740	0.41	1800	640	0.36
Airport Way S	2200	1250	0.57	2200	690	0.31	2200	1520	0.69	2200	400	0.18
M L King Jr Way S	2700	1200	0.44	2700	1100	0.41	2700	1610	0.60	2700	1150	0.43
51st Ave S	1980	250	0.13	1980	320	0.16	1980	280	0.14	1980	320	0.16

Notes:

1. Outbound and inbound directions relative to Seattle.
2. Capacities for King County, Shoreline and Lake Forest Park are from King County traffic model, Forecast Years 1993 (Existing) and 2012 (Comp Plan).
3. Capacities for Tukwila are from Seattle traffic model - Forecast Years 1990 (Existing) and 2010 (Comp Plan).
4. All volumes are from Seattle traffic model - Forecast Years 1990 (Existing) and 2010 (Comp Plan).
5. v/c ratio = volume divided by capacity.
6. 5th Ave NE location north of I5 on-ramp.
7. Volumes rounded to nearest ten.

Sources: Seattle OMP;
King County Transportation Planning Section

Transportation Appendix E:

State Highways in Seattle: Inventory, Projects and Impacts

State Highways

The City of Seattle cooperates with the Washington State Department of Transportation (WSDOT) to plan improvements to state transportation facilities and services and to ensure that the City's plans are consistent with the State Transportation Plan. This section describes the state highways within the city, level-of-service standards on state highways, and impacts of the Comprehensive Plan and Regional growth plans on state highways. Other state transportation facilities are described in preceding sections of this chapter.

Inventory

There are ten state highways within Seattle city limits. They are shown in Transportation Figure A-1, and include: I-5, I-90, SR 99, SR 509, SR 513, SR 519, SR 520, SR 522, SR 523, and SR 900. I-5, I-90, SR 509, and SR 520 are limited access freeways. SR 99, while not classified as a limited access facility, functions as such through most of the segment between South Spokane Street and Winona Avenue North (near Green Lake), as well as south of the intersection of First Avenue South and East Marginal Way South.

Transportation Figure A-17 summarizes general information on state highways in Seattle, as provided by WSDOT. Year 1998 or 1999 and projected 2010 volumes are shown in Transportation Figure A-18. The 1998 and 1999 volumes were compiled from traffic counts collected by WSDOT (freeways) and Seattle Transportation (non-freeways.) The 2010 projections were developed using the City of Seattle traffic forecasting model with regional population and employment forecasts.

The following are designated as "Highways of Statewide Significance" (HSS): I-5, I-90, SR 99, SR 509, SR 519, SR 520, and SR 522. Highways of statewide significance include, at a minimum, interstate highways and other principal arterials that are needed to connect major communities in the state. The state legislation designating HSS directs the State Transportation Commission to give higher priority for correcting identified deficiencies on highways of statewide significance.

Level-of-Service Standards

WSDOT is responsible for setting level-of-service standards on highways of statewide significance, while local jurisdictions work with the Puget Sound Regional Council to establish level-of-service standards on other state highways. The level-of-service standard set by WSDOT for highways of statewide significance within Seattle is "Level-of-Service D – Mitigate." This says that LOS D or better is the preferred operating condition for highways in urban areas, but WSDOT recognizes that we may not achieve it by increasing capacity in all locations. Mitigation can include providing alternatives, e.g., light rail or commuter rail parallel to I-5.

Non-HSS highways are incorporated into the City's level-of-service standards for arterial streets (Policy T22 and Transportation Figure 3.) The non-HSS highways are included in screenlines with other arterial streets.

WSDOT periodically updates the State Transportation Plan. They expect to complete the next update in 2001. Through this process they are considering new ways to monitor performance of the state transportation system that could lead to revisions to the level-of-service standards.

Impacts on State Highways

The impacts of Seattle's Comprehensive Plan on state highways are not independent of impacts from the region's transportation and land use plans. Without growth in housing and employment in Seattle, traffic volumes on state highways would still increase due to growth in other parts of the region. Transportation Figure A-19 shows the allocation of year 2010 daily trips on each of the state highways within Seattle in terms of those trips with origins and destinations that occur within Seattle compared to the rest of the region. Close to 50 percent of the trips on SR 99, SR 513, SR 519, and SR 522 within the city limits have both their origin and destination within the city limits. Only two state highways – I-90 and SR 509 – have more than 10 percent of their trips with neither an origin nor destination in Seattle.

Transportation Figure A-18 summarizes 1998 or 1999 and projected 2010 traffic volumes and volume-to-capacity (V/C) ratios on selected segments of state highways. The use of V/C to indicate impacts is consistent with the methodology for measuring level-of-service standards on the City's arterial street system (Policy T22). In the case of arterial level-of-service standards, the City estimates V/C ratios across screenlines.

State Highway Improvements

The City of Seattle will continue to coordinate with WSDOT for consistency between our plans and projects. Transportation Figure A-20 shows the Financially Constrained 20-Year Mobility Strategies from the 2001 to 2020 State Highway System Plan. In addition, the City of Seattle is participating in the planning and project development process for improvements to the SR 520 corridor across Lake Washington.

Transportation Figure A-17

State Highway Inventory

Route Designation	Enter City (Arm)	Leave City (Arm)	Length	Federal Functional Class	Hss Or Non-Hss	Access Class	Posted Speed	# Lanes
I-5	158.24	174.64	16.40	Urban Interstate	HSS	Full limited access	60	6 to 8
I-5 Reversible Lanes	0.00	7.14	7.14	Urban Interstate	HSS	Full limited access	60	1 to 4
I-90	0.00	3.14	3.14	Urban Interstate	HSS	Full limited access	60	4 to 8
I-90 Reversible Lanes	0.00	3.09	3.09	Urban Interstate	HSS	Full limited access	60	2
SR 99	21.22	36.75	15.53	Urban Principal Arterial	HSS	Class 4 - 1st Ave. S. bridge to Spokane St. Class 1 - Spokane St. to Thomas St. Class 3 - Thomas Street to N. 85th Class 4 - N. 85th to N 145th	30 to 50	4 to 7
SR 509	33.50	35.17	1.67	U1	HSS	Full limited access	45 to 55	4 to 5
SR 513	0.00	3.35	3.35	Urban Other Principal Arterial	Non-HSS	Full limited access @ SR 520 I/C Class 2 - SR 520 to NE 44th Class 3 - NE 44th to Magnuson Pk.	30 to 40	4 to 6
SR 519	0.00	1.14	1.14	U1	HSS	Class 5	30 to 40	4 to 6
SR 520	0.00	3.07	3.07	U1	HSS	Full limited access	40 to 50	4
SR 522	0.00	4.22	4.22	U1	HSS	Full limited access @ I-5 I/C Class 4 for remainder	30 to 35	2 to 5
SR 523	0.00	2.45	2.45	U1	Non-HSS	Full limited access @ I-5 I/C Class 4 for remainder	35	4
SR 900	0.90	1.05	0.15	U1	Non-HSS	Class 3	50	4

Transportation Figure A-18

State Highway Traffic Volumes

			1998/99			2010		
			AWDT	PM Peak Hour		AWDT	PM Peak Hour	
State Highway	Location	Direction	Volume	Volume	V/C	Volume	Volume	V/C
I-5	Boeing Access Rd - Swift Ave S	NB	97,700	6,180	0.81	107,500	6,990	0.92
		SB	98,200	7,290	0.96	108,000	7,810	1.03
I-5	Corson - Columbia Way S/West Seattle Bridge	NB	108,300	7,240	0.95	114,200	7,630	1.00
		SB	112,300	7,930	1.04	117,900	8,250	1.09
I-5	I-90 - James St	NB	148,600	10,750	0.79	164,400	11,770	0.87
		SB	129,600	9,920	0.97	139,300	10,480	1.03
I-5	Lakeview Blvd E - SR 520	NB	149,200	14,240	0.99	156,300	14,830	1.03
		SB	151,600	8,350	0.93	159,800	8,820	0.98
I-5	SR 520 - NE 50th Street	NB	144,500	13,410	0.93	151,600	13,960	0.97
		SB	142,700	7,590	1.05	149,300	7,930	1.10
I-5	NE 65th St - SR 522	NB	132,300	12,360	1.03	138,600	12,820	1.07
		SB	129,200	7,050	0.98	133,900	7,300	1.01
I-5	NE 130th St - NE 145th St	NB	99,000	7,980	1.11	105,000	8,440	1.17
		SB	97,600	5,710	0.79	103,200	6,090	0.85
I-90	I-5 - Rainier Ave S	EB	63,400	6,180	0.94	68,300	6,620	1.00
		WB	61,300	4,380	0.66	67,500	4,800	0.73
I-90	Rainier Ave S - lake Washington	EB	66,500	5,530	1.02	73,800	6,010	1.11
		WB	68,200	5,680	1.05	74,800	6,100	1.13
SR 99	14th Ave S - S Cloverdale St	NB	18,800	1,380	0.46	22,100	1,500	0.50
		SB	16,300	1,390	0.46	19,800	1,880	0.63
SR 99	West Marginal Way S - S Michigan St (First Avenue S. Bridge)	NB	42,400	2,610	0.44	45,500	2,840	0.47
		SB	41,000	4,610	0.77	44,200	4,930	0.82
SR 99	East Marginal Way S - West Seattle Bridge	NB	26,200	2,550	0.95	28,600	2,820	1.04
		SB	24,900	2,470	0.92	27,300	2,600	0.96
SR 99	First Ave S Ramps - Seneca/Spring	NB	54,100	5,090	0.94	56,900	5,390	1.00
		SB	53,000	5,140	0.95	55,700	5,340	0.99
SR 99	Raye St - Bridge Way N (Aurora Bridge)	NB	40,200	4,870	0.98	44,700	5,260	1.06
		SB	42,800	3,290	0.66	47,000	3,690	0.75
SR 99	Winona Ave N - N 80th St	NB	19,600	2,080	0.77	21,500	2,260	0.84
		SB	19,700	1,400	0.52	22,300	1,710	0.63
SR 99	Roosevelt Way N - N 145th St	NB	18,500	1,890	0.96	20,200	2,110	1.07
		SB	18,900	1,320	0.67	21,400	1,520	0.77
SR 99	S 112th St - S Cloverdale St	NB	26,200	1,660	0.46	28,500	1,770	0.49
		SB	27,500	3,490	0.97	30,300	3,790	1.05
SR 513	SR 520 Ramps - NE Pacific St (Montlake Bridge)	NB	30,100	2,410	1.15	32,300	2,520	1.20
		SB	31,000	2,270	1.08	33,100	2,440	1.16

Transportation Figure A-18 (continued)

State Highway Traffic Volumes

SR 513	Montlake Blvd NE - Union Bay Pl NE	EB	18,700	1,860	0.78	19,000	1,920	0.80
		WB	20,900	1,370	0.57	21,300	1,380	0.58
SR 522	Roosevelt Way NE - 12th Ave NE	NB	14,700	1,650	1.03	15,300	1,700	1.06
		SB	14,500	670	0.34	14,700	700	0.35
SR 522	NE 137th St - NE 145th St	NB	18,700	1,840	0.83	20,300	2,000	0.91
		SB	20,700	1,290	0.58	22,400	1,430	0.65
SR 523	5th Ave NE - 15th Ave NE	EB	14,900	1,210	0.67	14,900	1,210	0.67
		WB	14,000	930	0.52	14,000	1,040	0.58
SR 520	I-5 - Montlake Blvd	EB	53,100	3,390	0.94	54,300	3,490	0.97
		WB	56,500	4,020	1.12	58,100	4,090	1.14
SR 520	Montlake Blvd - Lake Washington	EB	58,100	3,670	0.97	61,700	3,940	1.04
		WB	58,200	3,950	1.04	61,700	4,070	1.07
SR 519	First Ave S - Fourth Ave S	EB	11,600	890	0.42	19,700	1,500	0.44
		WB	10,900	1,010	0.48	13,500	1,430	0.42
Note: Volumes do not include HOV lanes.								

Transportation Figure A-19

Origins and Destinations of Trips on State Highways Within Seattle

	Seattle to Seattle (internal)	Seattle to Region	Region to Seattle	Region to Region (external)
PM Peak Hour				
I-5	22%	43%	27%	8%
I-90	5%	50%	32%	13%
SR 99	47%	31%	18%	4%
SR 509	9%	50%	26%	16%
SR 513	53%	27%	19%	0%
SR 519	33%	54%	6%	8%
SR 520	5%	53%	40%	3%
SR 522	49%	30%	20%	2%
SR 523	6%	44%	42%	8%
Daily				
I-5	22%	35%	34%	8%
I-90	6%	39%	40%	15%
SR 99	50%	23%	23%	4%
SR 509	9%	37%	36%	18%
SR 513	54%	22%	23%	0%
SR 519	45%	31%	17%	6%
SR 520	6%	46%	45%	3%
SR 522	54%	22%	23%	1%
SR 523	6%	36%	49%	9%

Transportation Figure A-20

WSDOT State Highway Project List

Region	CTY	SR	NHS	Section Length	Improvement Program	Location	Description of Improvement	Est. Cost 1997$		Accuracy	Financially Constrained
								Low	High		
Northwest	King	5	Y	0.45	Mobility	Airport/Industrial Way Interchange Vicinity	HOV direct access to Industrial Way and the E-3 Busway.	$39.19 M	$46.10 M	Planning	yes
Northwest	King	5	Y	1.49	Mobility	I-5 through downtown Seattle	Rechannelize Northbound I-5 through downtown Seattle	$1.09 M	$1.25 M	Scoping	yes
Northwest	King	5	Y	1.40	Mobility	E. Denny Way to SR 520	NFS - modify Mercer St. I/C and reversible lane for weave from SR 520 to Mercer St.	$39.30 M	$51.10 M	Planning	yes
Northwest	King	5	Y	0.00	Mobility	NE 50th St. I/C	HOV Direct Access Ramps at NE 50th St.	$6.80 M	$8.80 M	Planning	yes
Northwest	King	5	Y	5.33	Mobility	NE 102 St. to SR 104(Snohomish Co. Line)	Rebuild Pedestrian x-ing, add stalls to Bethel Lutheran Church, Shoreline Christian Church and North Jackson Park Park & ride lots and TSM. Regional rail system.	$2.40 M	$3.12 M	Planning	yes
Northwest	King	5	Y	0.00	Mobility	SR 523(NE 145th St.) I/C Vicinity	HOV Direct Access Ramps at SR 523/145th	$9.90 M	$12.89 M	Planning	yes
Northwest	King	99	N	0.54	Mobility	SR 509 I/C	NB HOV bypass @ SR 509. Regional rail system.	$5.60 M	$7.00 M	Planning	yes
Northwest	King	99	Y	3.05	Mobility	SR 509 I/C to Spokane St.	[New parallel 1st Ave. southbound bridge, rehab existing bridge] NFS - HOV lanes, partial access control, signal coordination? Regional rail system.	$2.44 M	$2.80 M	Scoping	yes
Northwest	King	99	Y	3.05	Mobility	North of Denny Way Off Ramp(SB) to N. 50th St.	Study w/ city of Seattle for outside lane conversion to HOV and additional transit improvements. Aggressive access management. Regional Bus service	$1.00 M	$1.30 M	Planning	yes
Northwest	King	99	Y	2.83	Mobility	N. 50th St. to N. 105th St.	Study w/ city of Seattle for outside lane conversion to HOV and additional transit improvements. Aggressive access management. Signal coordination. Regional Bus service	$1.00 M	$1.30 M	Planning	yes

Transportation Figure A-20 (continued)

WSDOT State Highway Project List

Northwest	King	99	Y	1.94	Mobility	N. 105th St. to N. 145th St.(Seattle - NCL)	Study with city of Seattle - Widen to 6/7 lanes for HOV w/ transit and pedestrian improvements. Aggressive access management. Signal coordination. Regional Bus service	$9.00 M	$11.70 M	Planning	yes
Northwest	King	509	Y	3.99	Mobility	S. 136th Street to 1st Ave S.	NFS - widen to 6 lanes w/ HOV	$46.35 M	$60.26 M	Planning	yes
Northwest	King	519		1.14	Trunk Completion	Seattle Waterfront to I-90	Highway/railroad grade separations and construction of directional couplet.	$110.00 M	$126.50 M	Scoping	yes
Northwest	King	522	Y	4.23	Mobility	I-5 to NE 145th Street	Implement improvements identified in SR 520 Mult-imodal Study including transit lane enhancements, access management strategies, pedestrian improvements and HOV priority at intersections.	$13.89 M	$18.06 M	Scoping	yes
Northwest	King	522	Y	11.10	Mobility	I-5 to I-405	SR 522 Transportation Demand Management (TDM) Project	$3.00 M	$3.90 M	Planning	yes
Northwest	King	523	N	2.45	Mobility	NE 145th Street from SR 99 to 32nd Ave. NE	Transit enhancements (Queue bypass), widen 145th St to provide additional left turn lane to SB I-5.	$5.60 M	$7.30 M	Planning	yes